

حمل الآن

مجاناً وحصرياً

المراجعة رقم (1)

اختبار شهر ابريل



Test

1

Total mark

18

[15 Marks]

1 Choose the correct answer from those given :

(1) $\int \frac{x^2 + 3x}{x} dx = \dots + C$

(a) $\frac{1}{2} x^2 + 3x$

(b) $x + 3$

(c) $x^2 + 3x$

(d) $\frac{x^3 + 3x^2}{x^2}$

(2) The number of the different ways can 4 students sit on 4 seats in form of a row equals

(a) $4 + 4$

(b) 4×4

(c) $4 \times 3 \times 2 \times 1$

(d) 1

(3) $\int \sec x (\sec x - \tan x) dx = \dots + c$

(a) $\tan x + \sec x$

(b) $\tan x - \sec x$

(c) $\cot x - \csc x$

(d) $\cot x + \csc x$

(4) If $y = \tan x$, then $\frac{dy}{dx} = \dots$

(a) $1 + y$

(b) $1 - y$

(c) $1 + y^2$

(d) $1 - y^2$

(5) If $\lfloor n+1 \rfloor = 30 \lfloor n-1 \rfloor$, then $n = \dots$

(a) 5

(b) 6

(c) 29

(d) 30

(6) If $\theta \in]0, \frac{\pi}{2}[$, $\sin \theta = \frac{3}{5}$, then $\tan 2\theta = \dots$

(a) $\frac{15}{8}$

(b) $\frac{24}{17}$

(c) $\frac{3}{4}$

(d) $\frac{24}{7}$

(7) The slope of the tangent to the curve $y = 3x^2 + 2x + 1$ at $x = 2$ equals

(a) 5

(b) 8

(c) 14

(d) 17

(8) If $y = 3x^5 + 4 \cot x$, then $\frac{dy}{dx} = \dots$

(a) $15x^4 + 4 \sec^2 x$

(b) $15x^4 + 4 \csc^2 x$

(c) $15x^4 - 4 \sec^2 x$

(d) $15x^4 - 4 \csc^2 x$

(9) The solution set of the equation $-\frac{x}{10} = {}^{x-1}P_{x-3}$ is

(a) $\{5\}$

(b) $\{6\}$

(c) $\{7\}$

(d) $\{8\}$

(10) The first derivative for the function $y = (6x^3 + 3x + 10)^{10}$ at $x = -1$ equals

(a) -150

(b) -50

(c) 50

(d) 210

(11) If $\lfloor 7 \rfloor = {}^7P_x$, then $x = \dots$

(a) 6 or 7

(b) 7

(c) 1 or zero

(d) 5040

(12) If $(n^2 + 9n + 20) = \frac{n+5}{x}$, then $x = \dots$

(a) $n + 3$

(b) $\lfloor n + 3 \rfloor$

(c) $n + 4$

(d) $n + {}^5P_2$

2 Answer the following two questions :

(1) How many even numbers consists of 3 different digits could be formed from the set of digits $\{2, 3, 4, 5, 7\}$ [1 $\frac{1}{2}$ Marks]

(2) Find the solution set of the equation : $\cos X - 2 \sin^2 \frac{1}{2} X = 0$ where $0^\circ < X < 360^\circ$ [1 $\frac{1}{2}$ Marks]

Test

2

Total mark

18

1 Choose the correct answer from those given :

[15 Marks]

(1) The slope of the tangent to the curve : $y = \sin 2X$ at $X = \frac{\pi}{2}$ equals

- (a) 1 (b) zero (c) -1 (d) -2

(2) If $\cos 2A = \frac{7}{25}$, then $\sin A = \dots\dots\dots$ where $A \in]0, \frac{\pi}{2}[$

- (a) $\frac{16}{25}$ (b) $\frac{3}{5}$ (c) $\frac{4}{5}$ (d) $\frac{5}{4}$

(3) ${}^{n+1}P_{r+1} = \dots\dots\dots \times {}^nP_r$

- (a) $n-1$ (b) n (c) $n+1$ (d) $n+2$

(4) $\int \frac{\cos X}{1 - \cos^2 X} dX = \dots\dots\dots + c$

- (a) $\csc X$ (b) $-\csc X$ (c) $\cot X$ (d) $-\cot X$

(5) If $y = (z+1)^3$, $z = X^5 - 1$, then $\frac{dy}{dX} = \dots\dots\dots$

- (a) X^{15} (b) X^8 (c) $15X^{14}$ (d) $8X^7$

(6) The solution set in $\mathbb{R}$ for the equation $|\underline{x}| = 1$ is

- (a) $\{1\}$ (b) $\{\text{zero}\}$ (c) $\{0, 1\}$ (d) $\{1, -1\}$

(7) The measure of the positive angle that the tangent to the curve of the function f where $f(X) = \frac{X+2}{X-2}$ makes with the positive direction of X -axis at the point $(0, -1)$ equals

- (a) 45° (b) $67 \frac{1}{2}^\circ$ (c) 135° (d) 150°

(8) The number of ways that 5 students can sit on 7 seats in one row equals

- (a) $\underline{7}$ (b) $\underline{5}$ (c) 7P_5 (d) 7C_5

(9) $\int (2X+1)^{-4} dX = \dots\dots\dots + C$

- (a) $(2X+1)^{-3}$ (b) $(2X+1)^5$ (c) $-\frac{1}{6}(2X+1)^{-3}$ (d) $-8X^2$

(10) If $y = 6 + \sec x$, then $\frac{dy}{dx} = \dots\dots\dots$

(a) $\tan^2 x$

(b) $\sec x \tan x$

(c) $\csc x \cot x$

(d) $-\sec^2 x$

(11) $\frac{{}^7P_r}{{}^7P_{r-1}} = \dots\dots\dots$

(a) r

(b) $r - 1$

(c) $7 - r$

(d) $8 - r$

(12) If $\frac{1}{9} + \frac{1}{10} = \frac{x}{11}$, then $x = \dots\dots\dots$

(a) 1

(b) 11

(c) 121

(d) 132

2 Answer the following two questions :

(1) If ${}^{n-1}P_3 : {}^{n+1}P_3 = 5 : 12$ Find the value of : $n - 3$

$[1\frac{1}{2}$ Marks]

(2) Find the equation of the normal to the curve : $y = \tan\left(\pi - \frac{3}{4}x\right)$ at the point $(\pi, 1)$

$[1\frac{1}{2}$ Marks]

Test

1

Total mark

12

1 Choose the correct answer from the given ones :

(9 marks)

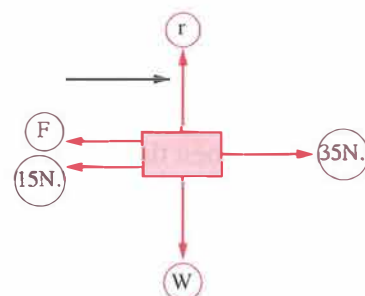
- (1) If a body moves on a smooth inclined plane under the action of its weight only , then its acceleration is only based on
- (a) its mass. (b) its weight.
(c) the angle of inclination of the plane. (d) the reaction of the plane.
- (2) The momentum of a bullet whose mass is 100 gm. moving at velocity 240 m./sec. is
- (a) 24×10^{-3} gm.m./sec. (b) 24 kg.m./sec.
(c) 24×10^4 gm.m./sec. (d) 24×10^3 kg.m./sec.

(3) In the opposite figure :

If the body of mass 5 kg. moves with uniform acceleration of magnitude 2 m./sec^2

, then $F = \dots\dots\dots \text{ N.}$

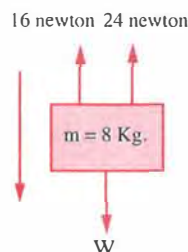
- (a) 10 (b) 12
(c) 15 (d) 18



(4) In the opposite figure :

The magnitude of acceleration (in m./sec^2) produced by the forces 24 , 16 N act on the body of mass 8 kg. equals

- (a) 2.4 (b) 4.8
(c) 6.4 (d) 9.6



(5) 147 newton = kg.wt.

- (a) 0.15 (b) 15 (c) 147 (d) 1440.7

- (6) A parachutist descends vertically downwards. The air resistance to its motion is directly proportional to the square of his speed and his velocity was v_1 when the air resistance is equal to $\frac{9}{25}$ of his weight. If the maximum velocity to the parachutist is v_2 Then $v_1 : v_2$

- (a) 9 : 25 (b) 25 : 9 (c) 3 : 5 (d) 5 : 3

2 Answer the following questions :

- [a]** If the last car of a train of mass 24.5 tons is separated from the train when its velocity was 54 km./h. to move in a uniform retardation and stopped after 125 m. , find the magnitude of the resistance acting on the separated car in kg.wt. (1.5 marks)
- [b]** A body of mass 2 kg. is placed on a rough plane which inclines at 30° to the horizontal. A horizontal force of magnitude 20 newtons acts on the body towards the plane , then the body moves in a uniform velocity. Find the coefficient of the kinetic friction between the body and the plane. (1.5 marks)

Test

2

Total mark

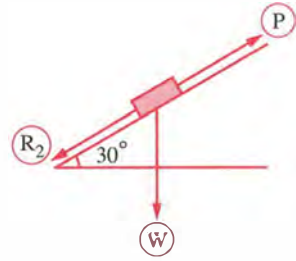
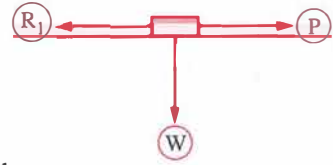
2

1 Choose the correct answer from the given ones :

(9 marks)

- (1)** If a body of mass m is placed at the top of an inclined rough plane that makes with the horizontal an angle of measure θ and the coefficient of kinetic friction between the body and the plane is μ_k . If the body slides under action of its weight only , then the acceleration =
- (a) $g \sin \theta$ (b) $g \cos \theta$
(c) $g (\mu_k \sin \theta - \cos \theta)$ (d) $g (\sin \theta - \mu_k \cos \theta)$
- (2)** A body of mass 500 gm. is left to fall from a height of 4.9 metres on the ground surface , then the magnitude of its momentum as it reaches the ground is
- (a) 2.45 kg.m./sec. (b) 4.9 kg.m./sec.
(c) 2450 kg.m./sec. (d) 4900 kg.m./sec.
- (3)** $\frac{1}{7}$ gm.wt. = dyne.
- (a) 1.4 (b) 14 (c) 140 (d) 1400
- (4)** A helicopter of weight 3500 kg.wt. and the force of its engine is 9000 kg.wt. , if its speed changed from 21 m./sec. to 7 m./sec. when it moved vertically upwards 50 meters , then the air resistance for its motion = kg.wt.
- (a) 67620 (b) 48020 (c) 6900 (d) 6762

- (5) A body of weight (W) moves on a horizontal plane with uniform velocity against resistance of magnitude R_1 under action of a horizontal force of magnitude $\vec{P}$ and the same body moves on an inclined plane which makes an angle of measure 30° with the horizontal , with a uniform velocity against a resistance of magnitude R_2 and under action of the same force $\vec{P}$, then $R_1 - R_2 = \dots\dots\dots$



- (a) W (b) $\frac{1}{4} W$
(c) $\frac{1}{2} W$ (d) $\frac{\sqrt{3}}{2} W$

- (6) A balloon moves vertically downwards against a resistance of magnitude proportional with the square of its speed. The maximum velocity of the balloon is (v) m./sec. if the balloon moves against a resistance of magnitude $\frac{16}{49}$ of its weight , its velocity decreases by 1.5 m./sec. than its maximum velocity , then the maximum velocity that the balloon can move with = $\dots\dots\dots$ m./sec.

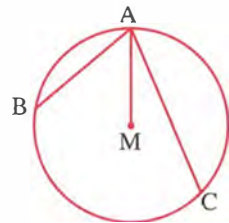
- (a) 2.5 (b) 3.5 (c) 6 (d) 7

2 Answer the following questions :

- [a] A bullet of mass 24.5 gm. is fired horizontally with velocity 60 m./sec. at a vertical wooden barrier , then it crossed it in $\frac{1}{60}$ of second , and lost $\frac{2}{3}$ the magnitude of its velocity. Find the magnitude of the resistance of the wooden barrier to the bullet given that it is constant. (1.5 marks)

[b] In the opposite figure :

$\overline{AM}$ is a vertical radius , $\overline{AB}$, $\overline{AC}$ are two chords representing two smooth rods in the circle where $AC > AB$. Two beads slid from rest from point A such that one bead on the chord $\overline{AB}$ to reach B after time t_1 and the other bead on the chord $\overline{AC}$ to reach C after time t_2 , find the ratio $t_1 : t_2$

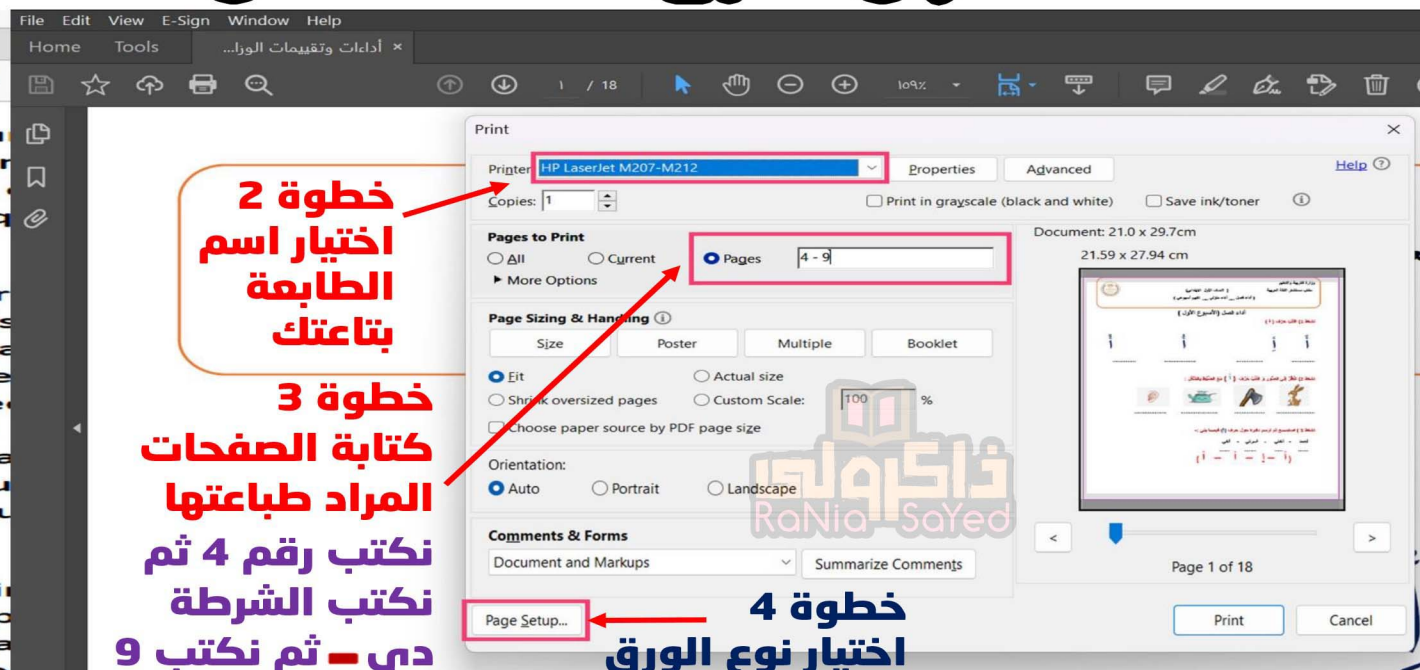


(1.5 marks)

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



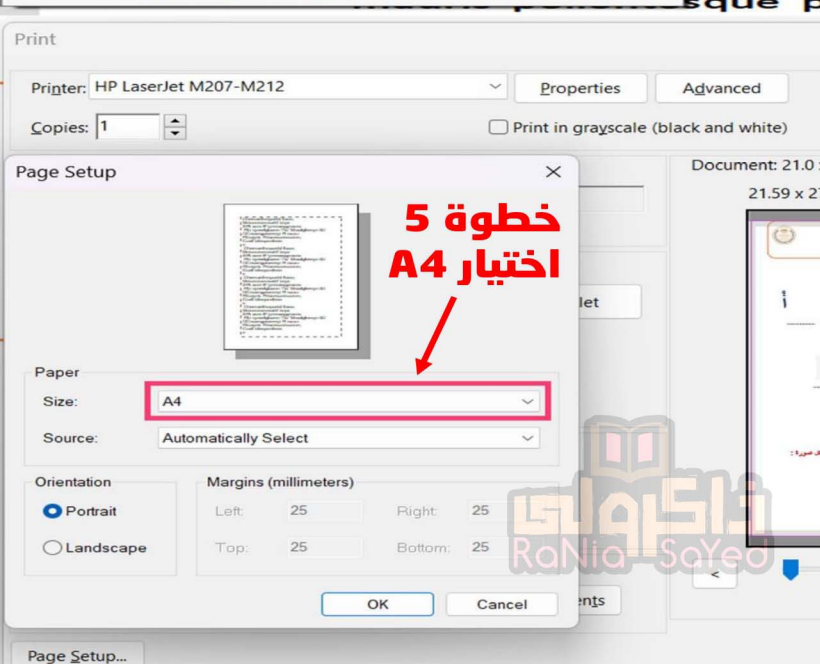
خطوة 1



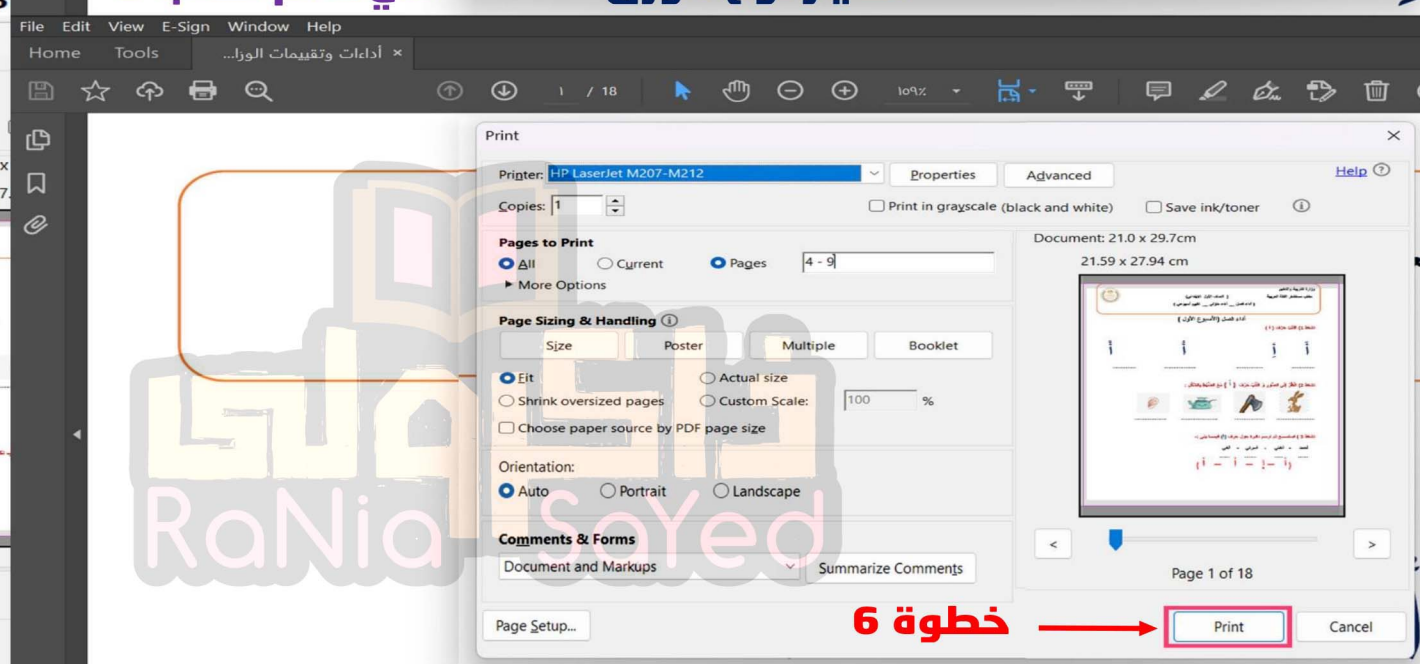
خطوة 2
اختيار اسم
الطابعة
بتاعتك

خطوة 3
كتابة الصفحات
المراد طباعتها
نكتب رقم 4 ثم
نكتب الشرطة
دي - ثم نكتب 9

خطوة 4
اختيار نوع الورق



خطوة 5
اختيار A4



خطوة 6

حمل الآن

مجاناً وحصرياً

المراجعة رقم (2)

اختبار شهر ابريل





⑧ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء الصفى الأسبوع الثامن ⑧

First: Algebra:

1) (T_n) is a geometric sequence in which $T_2 = 32$ and $T_7 = 1$, find the sequence.

Solu:

2) A geometric sequence all terms are positive, its first term equals four times its third term and the sum of its second and fifth terms equals 36, find the sequence.

Solu:

3) (T_n) is a geometric sequence all terms are positive in which $T_2 = 8$ and $T_3 - T_1 = 12$, find the sequence.

Solu:

4) If $6a$, $3b$, $2c$ and $3d$ are four positive quantities form a geometric sequence, then prove that $a + d > c$.

Solu:

5) Insert five geometric means between $\frac{1}{3}$ and 81.

Solu:



Second: Calculus and integration:

6) If $y = \frac{\cos x}{1 - \sin x}$, then find the slope of the tangent to the curve at the point (0,1) .

Solu:

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7) If $y = \frac{\tan 3x}{1 - \tan 2x \tan x}$, then find $\frac{dy}{dx}$.

Solu:

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8) If $y = \sec 3x + 1$, then find the rate of change of y with respect to x at $x = \frac{\pi}{3}$.

Solu:

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Third: Trigonometry:

9) Without using calculator find $\sin \frac{1}{2} \theta$ given that, $\sin \theta = \frac{-4}{5}$, $180^\circ < \theta < 270^\circ$

Solu:

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10) Without using calculator find $\tan 165^\circ$.

Solu:

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⑧ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء المنزلي الأسبوع الثامن ⑧

First: Algebra:

1) (T_n) is a geometric sequence in which $T_2 = 4$ and $T_3 = 8$, find the sequence.

Solu:

2) A geometric sequence its second term exceeds its first time by 4, and the sum of its second and third terms equals 30, find the sequence then find its fifth term.

Solu:

3) (T_n) is a geometric sequence all terms are positive, the product of the first terms equals 27 and its common ratio equals 3, find this sequence.

Solu:

4) If 4 , b , c form an arithmetic sequence , 2 , b + 3 , 5c form a geometric sequence, then find each of b and c .

Solu:

5) Insert five geometric means between $\frac{1}{3}$ and 243.

Solu:



Second: Calculus and integration:

6) If $y = \sin^2 x + \cos^2 x + \tan^2 x$, then find $\frac{dy}{dx}$

Solu:

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7) If $y = (1 + \cos 2x) (\sec 2x)$, then find $\frac{dy}{dx}$.

Solu:

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8) If $y = \cos^3 x + \cos 3x$, then find the rate of change of y with respect to x at $x = 0$.

Solu:

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Third: Trigonometry:

9) Without using calculator find $\sin \frac{1}{2} \theta$ given that, $\cos \theta = \frac{-4}{5}$, $90^\circ < \theta < 180^\circ$

Solu:

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10) Without using calculator find $\tan 22.5^\circ$.

Solu:

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⑨ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء الصفى الأسبوع التاسع ⑨

First: Algebra:

1) Find $\sum_{r=5}^{12} 3(2)^{r-1}$

Solu:

2) Find the sum of the first ten terms of the geometric sequence (1, -2, 4, -8)

Solu:

3) Find the sum of terms of the geometric sequence (1024, 512, 256, 128,, 1)

Solu:

4) Find the number of terms of the geometric sequence in which the first term = 243, the last term = 1 and the sum of its terms = 346

Solu:

5) How many terms should be taken from the geometric sequence (1, 2, 4,)
starting from its first term to get the sum = 127

Solu:



Second: Calculus and integration:

- 6) Find the points laying on the curve of the function $y = x^4 - 4x + 7$, such that the tangent to the curve is parallel to x-axis.

Solu:

- 7) Find the value of a that makes the line $y = 3x + a$ is a tangent to the curve $y = x^2 + 5$

Solu:

- 8) Find the equation of the tangent and the normal to the curve: $y = x \cos x$ at the point laying on it and whose abscissa = π

Solu:

- 9) Find the equation of the tangent to the curve of the function $f: f(x) = \sqrt{x-1}$ at the point (5,2)

Solu:

- 10) Find the equation of the normal to the curve of the function $f: f(x) = \sqrt{x-1}$ at the point (5,2)

Solu:



⑨ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء المنزلي الأسبوع التاسع ⑨

First: Algebra:

1) Find $\sum_{r=1}^8 (2)^r$

Solu:

2) Find the sum of the first ten terms of the geometric sequence (3, -9, 27, -81)

Solu:

3) Find the sum of terms of the geometric sequence (128, 64, 32,, $\frac{1}{2}$)

Solu:

4) Find the number of terms of the geometric sequence in which the first term $= \frac{1}{25}$, the last term = 25, and the sum of its terms $= \frac{781}{25}$

Solu:

5) How many terms should be taken from the geometric sequence (3, 6, 12,)
starting from its first term to get the sum = 381

Solu:



Second: Calculus and integration:

- 6) Find the points laying on the curve of the function $y = x^3 - 3x + 1$, such that the tangent to the curve is parallel to x-axis.

Solu:

- 7) Find the value of a that makes the line $x + y = a$ is a tangent to the curve $y = x^{-1}$

Solu:

- 8) Find the equation of the tangent and the normal to the curve: $y = x \sin x$ at the point laying on it and whose abscissa = π

Solu:

- 9) Find the equation of the tangent to the curve of the function $f: f(x) = \sqrt{2x + 1}$ at the point (0,1)

Solu:

- 10) Find the equation of the normal to the curve of the function $f: f(x) = \sqrt{2x + 1}$ at the point (0,1)

Solu:



⑨ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي التقييمات الأسبوعية الأسبوع التاسع ⑨

The first group:

1) Find the sum of the first ten terms of the geometric sequence (5, -10, 20, -40)

Solu:

2) Find the sum of terms of the geometric sequence (8, 4 , 2 ,....., $\frac{1}{8}$)

Solu:

3) How many terms should be taken from the geometric sequence (625,125, 25 ,)
starting from its first term to get the sum =781

Solu:

4) Find the equation of the tangent to the curve of the function $f: f(x) = \sqrt{2x + 7}$ at the point (1,3)

Solu:

5) Find the equation of the normal to the curve of the function $f: f(x) = \cos x$ at the point $(\pi, -1)$

Solu:



The second group:

1) Find the sum of the first ten terms of the geometric sequence (4, -8, 16, -32)

Solu:

2) Find the sum of terms of the geometric sequence (4 , 2 , 1 , , $\frac{1}{16}$)

Solu:

3) How many terms should be taken from the geometric sequence (256, 128, 64 ,)
starting from its first term to get the sum = 510

Solu:

4) Find the equation of the tangent to the curve of the function $f: f(x) = \sqrt{6x + 1}$ at the
point (4, 5)

Solu:

5) Find the equation of the normal to the curve of the function $f: f(x) = \sin \frac{1}{2}x$ at the
point $(\pi, 1)$

Solu:



The third group:

1) Find the sum of the first ten terms of the geometric sequence (1, -3, 9, -27)

Solu:

2) Find the sum of terms of the geometric sequence (2, 1 , $\frac{1}{2}$,....., $\frac{1}{32}$)

Solu:

3) How many terms should be taken from the geometric sequence (64,32, 16 ,)
starting from its first term to get the sum =127

Solu:

4) Find the equation of the tangent to the curve of the function f: $f(x) = \sqrt{7x + 2}$ at the
point (1,3)

Solu:

5) Find the equation of the normal to the curve of the function f: $f(x) = \tan \frac{1}{4}x$ at the
point (π ,1)

Solu:



⑩ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء الصفى الأسبوع العاشر ⑩

First: Algebra:

1) Find the sum of the infinite geometric series: $1 + \frac{1}{2} + \frac{1}{4} + \dots$

Solu:

2) A geometric sequence in which its first term is equal to the sum of the next terms up to infinity, find its common ratio.

Solu:

3) A geometric sequence, all terms are positive, the sum of its first and second terms equals 12 and its third term equals 1, show that it is possible to find the sum of its terms up to infinity, then find this sum.

Solu:

4) Find $\sum_{r=1}^{\infty} 49 \left(\frac{2}{7}\right)^r$

Solu:



Second: Calculus and integration:

5) Show that each of the two functions f_1, f_2 such that $f_1(x) = x^4 + 3x + 1$,
 $f_2(x) = x^4 + 3x + 1$ is an anti-derivative of the function $f: f(x) = 4x^3 + 3$

Solu:

6) Write a function that could be anti-derivative of the function $f: f(x) = 6x$

Solu:

7) Show that the function $t: t(x) = x^3 + 5x - 1$ is an anti-derivative of the function
 $f: f(x) = 3x^2 + 5$

Solu:

8) Verify the validity of the relation: $\int 8x(1 + x^2)^3 dx = (1 + x^2)^4 + c$
(c is a constant)

Solu:

Third: Trigonometry:

9) If θ is a positive acute angle, such that $\sin \theta = \frac{3}{5}$, then find $\cos 2\theta$ and $\sin \frac{1}{2}\theta$

Solu:

10) If θ is a positive acute angle, such that $\cos 2\theta = \frac{1}{8}$, then find $\tan \theta$

Solu:



⑩ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء المنزلى الأسبوع العاشر ⑩

First: Algebra:

1) Find the sum of the infinite geometric series: $1 + \frac{1}{3} + \frac{1}{9} + \dots$

Solu:

2) An infinite geometric sequence in which its first term is equal 18 and its fourth term equals $\frac{16}{3}$, find its sum.

Solu:

3) Find the geometric sequence in which the first term increases its second term by 64 and the sum of its terms up to infinity equals 256.

Solu:

4) Find $\sum_{r=1}^{\infty} 5 \left(\frac{3}{5}\right)^r$

Solu:



Second: Calculus and integration:

- 5) Show that each of the two functions f_1, f_2 such that $f_1(x) = x^5 + 4x^2 + 3$,
 $f_2(x) = x^5 + 4x^2 - 6$ is an anti-derivative of the function $f: f(x) = 5x^4 + 8x$

Solu:

- 6) Write a function that could be anti-derivative of the function $f: f(x) = 4x^3$

Solu:

- 7) Show that the function $t: t(x) = x^2 - x - 1$ is an anti-derivative of the function
 $f: f(x) = 2x - 1$

Solu:

- 8) Verify the validity of the relation: $\int \frac{x}{\sqrt{x^2 + 1}} dx = \sqrt{x^2 + 1} + c$: (c is a constant)

Solu:

Third: Trigonometry:

- 9) If θ is a positive acute angle, such that $\sin \theta = \frac{5}{13}$, then find $\cos 2\theta$ and $\sin \frac{1}{2}\theta$

Solu:

- 10) If θ is a positive acute angle, such that $\cos 2\theta = \frac{1}{4}$, then find $\tan \theta$

Solu:



⑩ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي التقييمات الأسبوعية الأسبوع العاشر ⑩

The first group:

1) Find the sum of the infinite geometric series: $1 + \frac{1}{4} + \frac{1}{8} + \dots$

Solu:

2) Find $\sum_{r=1}^{\infty} 6 \left(\frac{2}{3}\right)^r$

Solu:

3) Show that the function $t: t(x) = x^2 - x - 1$ is an anti-derivative of the function $f: f(x) = 2x - 1$

Solu:

4) Verify the validity of the relation: $\int (1 + \sin x) dx = x - \cos x + c$
(c is a constant)

Solu:

5) If θ is a positive acute angle, such that $\sin \theta = \frac{1}{3}$, then find $\cos 2\theta$

Solu:



The second group:

1) Find the sum of the infinite geometric series: $1 + \frac{1}{5} + \frac{1}{25} + \dots$

Solu:

2) Find $\sum_{r=1}^{\infty} 12 \left(\frac{1}{3}\right)^r$

Solu:

3) Show that the function $t: t(x) = x^3 - 5x - 1$ is an anti-derivative of the function $f: f(x) = 3x^2 - 5$

Solu:

4) Verify the validity of the relation: $\int (1 + \cos x) dx = x + \sin x + c$
(c is a constant)

Solu:

5) If θ is a positive acute angle, such that $\cos \theta = \frac{1}{8}$, then find $\cos 2\theta$

Solu:



The third group:

1) Find the sum of the infinite geometric series: $1 + \frac{1}{6} + \frac{1}{36} + \dots$

Solu:

2) Find $\sum_{r=1}^{\infty} 5 \left(\frac{3}{5}\right)^r$

Solu:

3) Show that the function $t: t(x) = x^5 + 1$ is an anti-derivative of the function $f: f(x) = 5x^4$

Solu:

4) Verify the validity of the relation: $\int (1 + \sec^2 x) dx = x + \tan x + c$
(c is a constant)

Solu:

5) If θ is a positive acute angle, such that $\cos \theta = \frac{1}{4}$, then find $\cos 2\theta$

Solu:



11 الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء الصفى الأسبوع الحادى عشر 11

First: Algebra:

- 1) If $(4, b, c)$ form an arithmetic sequence and $(2, b+3, 5c)$ form a geometric sequence , then find each of b and c

Solu:

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- 2) An infinite geometric sequence in which its first term is 18 and its fourth term is $\frac{16}{3}$, find its sum.

Solu:

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- 3) A geometric sequence, the sum of its first three terms equals 35 and the sum of the next three terms is 280, find this sequence.

Solu:

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Second: Calculus and integration:

- 4) Find: $\int x (3 - 5 x) dx$

Solu:

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- 5) Find: $\int (5 - 2 x)^4 dx$

Solu:

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6) Find: $\int x \sqrt{x^2 + 5} dx$

Solu:

7) Find: $\int (3x - \sec^2 x) dx$

Solu:

8) Find: $\int (5 \sin x + \cos 4x) dx$

Solu:

Third: Trigonometry:

9) A ship starts to move from a certain point in direction 70° east of south with velocity 12 km/hr., at the same moment another ship start moving in direction 55° north of east with velocity 5 km/hr. find the distance between the two ships after two hours from starting motion to the nearest two decimals.

Solu:

10) If $\sin A = \frac{4}{5}$, $A \in]0, \frac{\pi}{2}[$, $\cot B = \frac{5}{12}$, $B \in]\pi, \frac{3\pi}{2}[$ then find without using the calculator $\tan (A-B)$ and $\sin 2A$

Solu:



⑪ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء المنزلي الأسبوع الحادي عشر ⑪

First: Algebra:

1) If $(\frac{1}{2}a, b, c)$ form a geometric sequence, then prove that $4b < a + 2c$

Solu:

2) A geometric sequence in which its third term is the multiplicative inverse of its first term and its fifth term is $\frac{1}{125}$, prove that there are two solutions and find them.

Solu:

3) T_n is a geometric sequence with positive terms, $T_2 = 6$ and $T_3 - T_1 = 9$, find the sequence and the sum of its first 12 terms.

Solu:

Second: Calculus and integration:

4) Find: $\int (x - 3x^2)^2 dx$

Solu:

5) Find: $\int \frac{\sqrt{x+3}}{x^2+6x+9} dx$

Solu:



6) Find: $\int (x - 1)(x^2 - 2x + 3)^{-5} dx$

Solu:

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7) Find: $\int (1 + x + \tan^2 x) dx$

Solu:

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8) Find: $\int (2 \sin x + \cos 3x) dx$

Solu:

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Third: Trigonometry:

9) If A, B, C are measures of angles of a triangle such that $\tan B = \frac{4}{3}$ and $\tan C = 7$,
prove that $A = 45^\circ$

Solu:

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10) If $\sin \theta = \frac{-4}{5}$, $180^\circ < \theta < 270^\circ$ then find without using the calculator $\cos \frac{\theta}{2}$

Solu:

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⑪ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي - التقييمات الأسبوعية - الأسبوع الحادى عشر ⑪

The first group:

- 1) An infinite geometric sequence in which any term equals three times the sum of the next terms up to infinity, and its fifth term is 1. find this sequence.

Solu:

- 2) Find the number of terms of the geometric sequence in which the sum of its terms is $121 \frac{4}{9}$ and its first term 81 and its last term is $\frac{1}{9}$

Solu:

- 3) Find: $\int (3 - x + \sec x \tan x) dx$

Solu:

- 4) Find: $\int 8x \sqrt{4x^2 + 1} dx$

Solu:

- 5) If θ is a positive acute angle, such that $\sin \theta = \frac{1}{6}$, then find $\sin 2\theta$ and $\cos 2\theta$

Solu:



The second group:

- 1) An infinite geometric sequence in which any term equals three times the sum of the next terms up to infinity, and its fourth term is 1. find this sequence.

Solu:

- 2) Find the number of terms of the geometric sequence in which the sum of its terms is $364 \frac{4}{9}$ and its first term $\frac{1}{9}$ and its last term is 243.

Solu:

- 3) Find: $\int (3 + x^2 + \sin 5x) dx$

Solu:

- 4) Find: $\int 10x \sqrt{5x^2 + 1} dx$

Solu:

- 5) If θ is a positive acute angle, such that $\sin \theta = \frac{1}{8}$, then find $\sin 2\theta$ and $\cos 2\theta$

Solu:



The third group:

- 1) An infinite geometric sequence in which any term equals four times the sum of the next terms up to infinity, and its fourth term is 1. find this sequence.

Solu:

- 2) Find the number of terms of the geometric sequence in which the sum of its terms is $2730 \frac{5}{8}$ and its first term $\frac{1}{8}$ and its last term is 2048.

Solu:

- 3) Find: $\int (3 - x + \cos 7x) dx$

Solu:

- 4) Find: $\int 3x \sqrt{x^2 + 1} dx$

Solu:

- 5) If θ is a positive acute angle, such that $\sin \theta = \frac{2}{3}$, then find $\sin 2\theta$ and $\cos 2\theta$

Solu:



⑫ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء الصفی الأسبوع الثاني عشر ⑫

First: Algebra:

- 1) If you know that the set of mobile network numbers in a country consists of eleven numbers, and if the number (025) is fixed from the left, find the largest number of lines that this mobile network can accommodate.

Solu:

- 2) How many four-digit numbers for a counter formed from the digits { 1 , 2 , 3 , 4 , 5 }?

Solu:

- 3) How many three-digit numbers formed from the digits { 0 , 2 , 3 , 4 }?

Solu:

- 4) How many four-digit numbers formed from the digits { 2 , 3 , 4 , 5 , 6 } and divisible by 5?

Solu:

- 5) In how many ways can the four-different digit number be formed from the digits

{ 2 , 3 , 4 , 7 } , such that the tens digit is even ?

Solu:



6) Find: $\int (2x - 1)(x^2 - x + 1)^4 dx$

Solu:

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7) Find: $\int \frac{\cos x - \sin x}{(\cos x + \sin x)^2} dx$

Solu:

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8) Find: $\int \frac{\cos x}{(1 - \cos^2 x)} dx$

Solu:

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9) Find: $\int (\sec^3 x \tan x) dx$

Solu:

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10) Find: $\int (1 + \tan^2 x) dx$

Solu:

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⑫ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء المنزلي الأسبوع الثاني عشر ⑫

First: Algebra:

1) A restaurant serves 6 types of pies, 5 types of salads, and 4 types of drinks. How many meals can it serve daily, provided that the meal must include one type of pies, one type of salad, and one type of drink?

Solu:

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2) How many three-digit numbers formed from the digits { 1 , 2 , 3 , 4 }?

Solu:

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3) How many three-digit numbers formed from the digits { 0 , 3 , 5 , 7 }?

Solu:

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4) How many even four-digit numbers formed from the digits { 1 , 2 , 3 , 5 }?

Solu:

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5) In how many ways can the three-different digit number be formed from { 2 , 5 , 8 , 9 } , such that such that they are smaller than 900 ?

Solu:

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Second: Calculus and integration:

6) Find: $\int (x + 1) (x^2 + 2x - 1)^3 dx$

Solu:

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7) Find: $\int \frac{\sec^2 x + \csc^2 x}{(\tan x - \cot x)^2} dx$

Solu:

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8) Find: $\int \frac{\sin x}{(1 - \sin^2 x)} dx$

Solu:

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9) Find: $\int (\sec x + \tan x)(\tan x - \sec x) dx$

Solu:

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10) Find: $\int (\sin^2 x + \cos^2 x) dx$

Solu:

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⑫ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي - التقييمات الأسبوعية - الأسبوع الثاني عشر ⑫

The first group:

1)How many numbers can be formed for the digits { 1 , 2 , 3 , 4 } and they are less than 300?

Solu:

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2)How many three-different digit numbers could be formed from the digits {2 , 3 , 5 , 6 }?

Solu:

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3)How many four-digit numbers formed from the digits { 4 , 6 , 0 , 8 }?

Solu:

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The second group:

1) How many numbers can be formed for the digits { 1 , 3 , 4 , 5 } and they are less than 400?

Solu:

2) How many four-different digit numbers formed from the digits { 1 , 2 , 3 , 4 , 5 , 6 }?

Solu:

3) How many three-digit numbers formed from the digits { 0 , 2 , 3 , 6 , 8 }?

Solu:

4) Find: $\int (2x + 3)(x^2 + 3x + 3)^2 dx$

Solu:

5) Find: $\int (\csc^4 x \cot x) dx$

Solu:



The third group:

1) How many numbers can be formed for the digits { 1 , 3 , 4 , 5 } and they are less than 500?

Solu:

2) How many three-different digit numbers formed from the digits { 1 , 2 , 3 , 4 , 5 }?

Solu:

3) How many three-digit numbers formed from the digits { 0 , 1 , 2 , 3 }?

Solu:

4) Find: $\int (2x - 5)(x^2 - 5x + 5)^3 dx$

Solu:

5) Find: $\int (\tan^4 x \sec^4 x) dx$

Solu:

حمل الآن

مجاناً وحصرياً

المراجعة رقم (3)

اختبار شهر ابريل

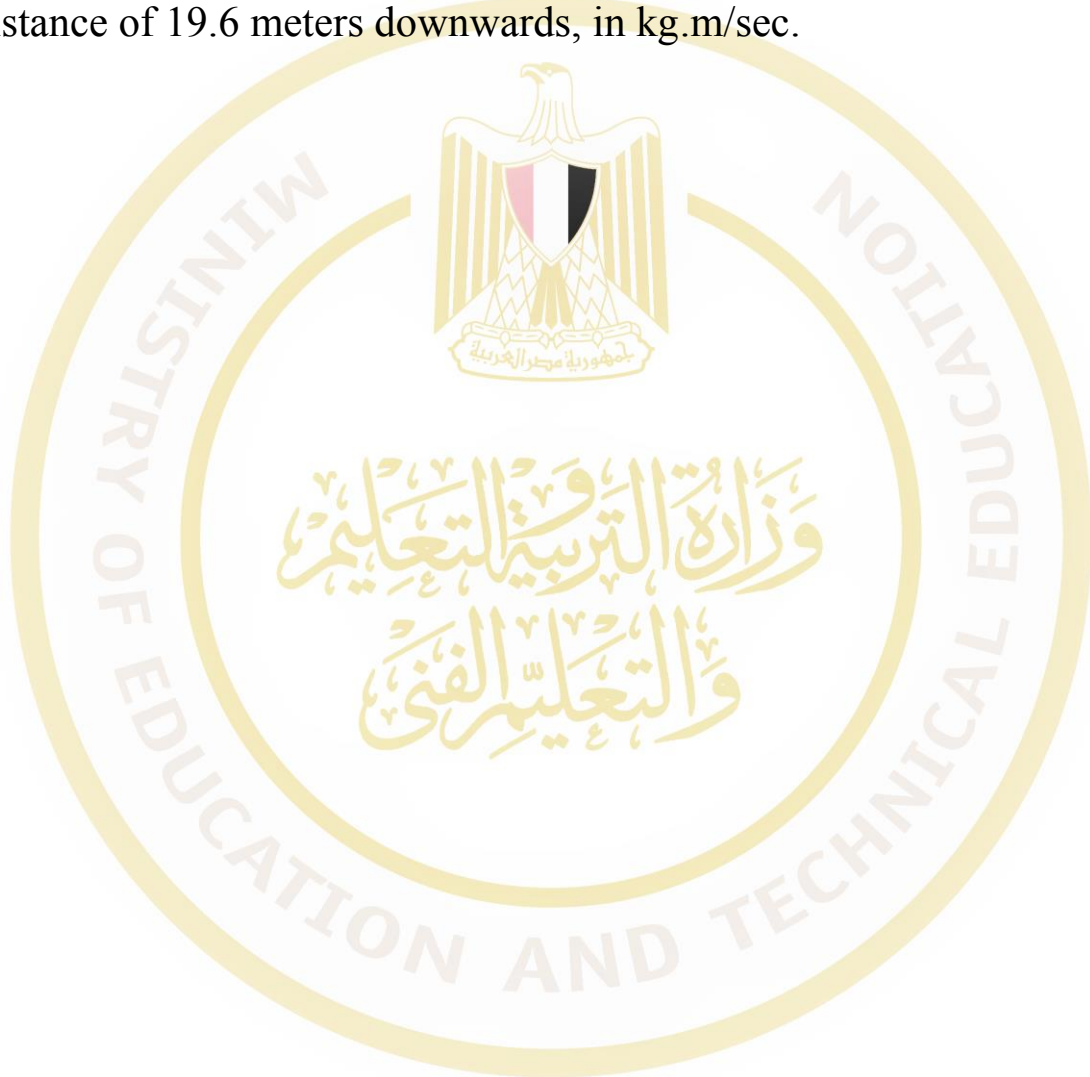


(8) الأداء الصفي - الصف الثاني الثانوي - علمي - تطبيقات الرياضيات لغات - الأسبوع الثامن (8)

- (1) A car with a mass of 4 tons moves in a straight line at a constant speed. If its momentum is 80 tons km/h, find its speed.
- (2) An object with a mass of 2 kg moves from rest in a straight line with a uniform acceleration of 10 m/sec^2 in the direction of its motion. Calculate the momentum of the object after 20 seconds from the start of its motion.
- (3) An object with a mass of 4 kg moves from rest in a straight line with a uniform acceleration of 5 m/sec^2 in the direction of its motion. Calculate the momentum of the object after it has traveled a distance of 40 meters.
- (4) A rubber ball falls from a height of 10 meters to the ground and rebounds vertically upwards to a height of 4.9 meters. If the change in its momentum due to the impact with the ground is 476 kg m/sec^2 , calculate the mass of the ball.
- (5) A body of mass 12 kg moves from rest in a straight line with a uniform acceleration of 5 m/sec^2 in the same direction as its motion. Find the change in momentum of the body during the third second from the start of its motion.
- (6) A body of mass 2 kg falls vertically downwards from a height of 98 meters. Calculate the momentum of the body 3 seconds after it falls.
- (7) A body of mass 7 kg falls vertically downwards from a height (s) meters above the ground. If its momentum upon impact with the ground is 49 kg.m/sec^2 , find the value of s in meters.
- (8) A body of mass 2 kg falls. If its momentum after (t) seconds during its fall is 78.4 kg m/sec , calculate the value of (t).

(9) A railway carriage of mass 4 tons moves horizontally at a constant speed of 15 m/sec. It collides with the barrier at the end of the track and rebounds backward at a speed of 10 m/sec. Calculate the change in the carriage's momentum as a result of the collision with the barrier, in tons.km/h.

(10) Calculate the momentum gained by a body of mass 500 gm when it falls a vertical distance of 19.6 meters downwards, in kg.m/sec.

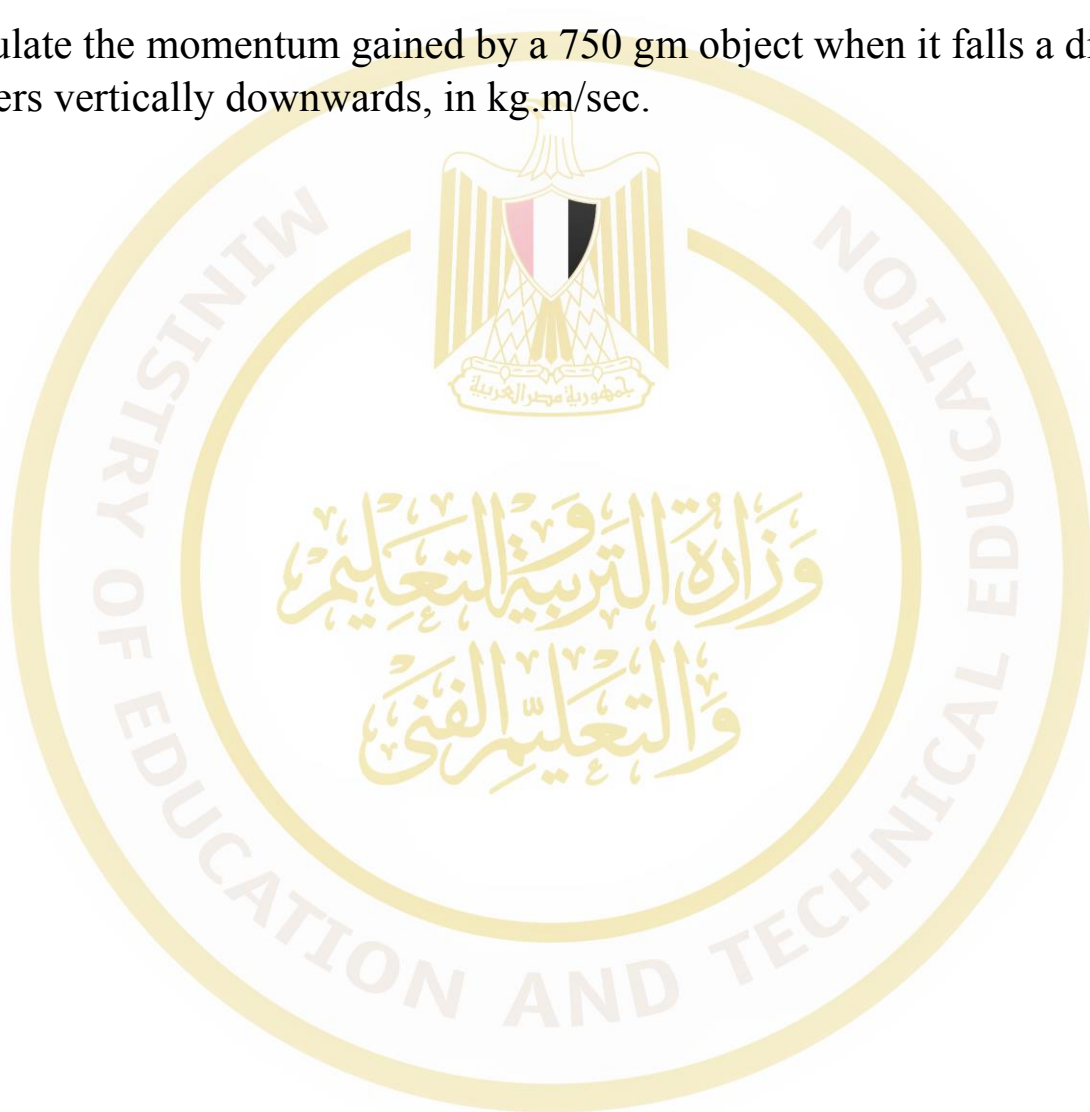


(8) الأداء المنزلي - الصف الثاني الثانوي - علمى - تطبيقات الرياضيات لغات - الأسبوع الثامن (8)

- (1) A car with a mass of 5 tons moves in a straight line at a constant speed. If its momentum is 60 tons km/h, find its speed.
- (2) An object with a mass of 6 kg moves from rest in a straight line with a uniform acceleration of 3 m/sec^2 in the direction of its motion. Calculate the momentum of the object after 8 seconds from the start of its motion.
- (3) An object with a mass of 4 kg moves from rest in a straight line with a uniform acceleration of 2 m/sec^2 in the direction of its motion. Calculate the momentum of the object after it has traveled a distance of 100 meters.
- (4) A rubber ball falls from a height of 40 meters to the ground and rebounds vertically upwards to a height of 10 meters. If the change in its momentum due to the impact with the ground is 504 kg m/sec^2 , calculate the mass of the ball.
- (5) A 5 kg object moves from rest in a straight line with a uniform acceleration of 6 m/sec^2 in the same direction as its motion. Find the change in momentum of the object during the fourth second from the start of its motion.
- (6) A 2 kg object falls vertically downwards from a height of 58.8 meters. Calculate the momentum of the object two seconds after it falls.
- (7) A 4 kg object falls vertically downwards from a height (s) meters above the ground. If its momentum upon impact with the ground is 39.2 kg.m/sec , find the value of s in meters.
- (8) A 3 kg object falls. If its momentum after (t) seconds during its fall is 88.2 kg m/sec , calculate the value of (t).

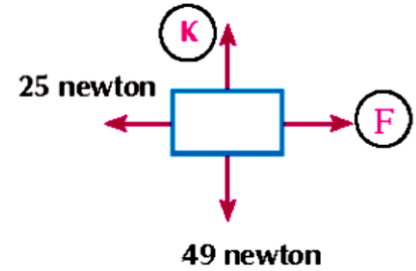
(9) A 3 ton railway car moves horizontally at a constant speed of 11 m/sec. It collides with the barrier at the end of the track and bounces backward at a speed of 9 m/sec. Calculate the change in the car's momentum as a result of the collision with the barrier, in tons.km/h.

(10) Calculate the momentum gained by a 750 gm object when it falls a distance of 10 meters vertically downwards, in kg.m/sec.

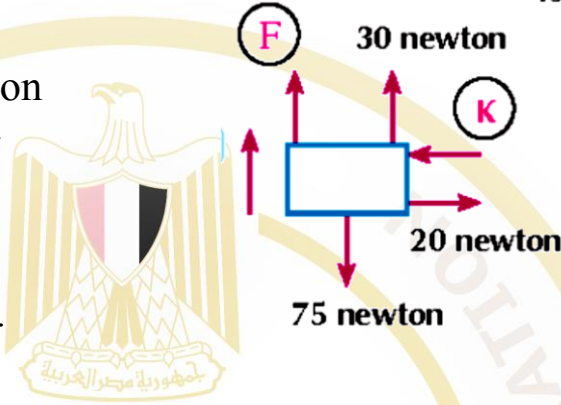


(9) الأداء الصفّي - الصف الثاني الثانوي - علمي - تطبيقات الرياضيات لغات - الأسبوع التاسع (9)

- (1) The opposite figure shows a stationary body acting on a set of forces.
Find the values of: F and K.



- (2) The opposite figure shows a body moving in the direction shown at a constant velocity under the action of a set of forces.
Find the values of : F and K.



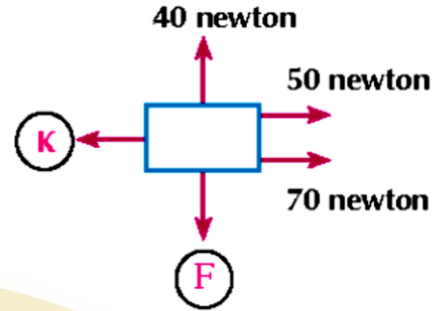
- (3) If an object moves at a constant velocity in a straight line under the action of the two forces: $\vec{F}_1 = 4\vec{i} - m\vec{j}$, $\vec{F}_2 = k\vec{i} + 7\vec{j}$, find the value of : $m + k$.
- (4) A car with a mass of 6 tons is moving at a constant velocity under the action of a constant resistance of 4 kg.wt per ton of the car's mass.
Find the force of the car's engine.
- (5) A train with a mass of 200 tons is moving at a constant speed. the force of the train's engine was 5 ton.wt Find the magnitude of the resistance per ton of the train's mass.
- (6) If a body of weight 24 kg.wt descends at a constant velocity on an inclined plane at an angle of 60° Find in kg.wt the resistance of the plane.
- (7) A parachutist and his equipment of weight 100 kg.wt , the air resistance to his movement is proportional to the square of his speed. If the maximum landing speed of the parachutist was 15 km/h, find the air resistance when his speed was 9 km/h.

- (8) A train with a mass of 180 tons moves under the action of a resistance proportional to the square of its speed. If this resistance was 10 kg.wt per ton of the train's mass when the train's speed was 72 km/h, find the maximum speed of the train if the locomotive is pulling it with a constant force of 5 ton.wt.
- (9) An object with a mass of 50 kg is placed on a horizontal plane and tied to a rope inclined to the horizontal at an angle of 30° . When the rope is pulled with a force of 20 kg.wt, the object moves at a constant speed on the plane. Find the resistance of the plane and the magnitude of the normal reaction of the plane.
- (10) An object with a mass of 60 kg is pulled at a constant speed on a horizontal plane by a rope inclined to the horizontal by an angle whose cosine is equal to 0.8, If the tension force of the rope is 40 kg . wt, find: the resistance of the plane and the magnitude of the normal reaction of the plane.

(9) الأداء المنزلي - الصف الثاني الثانوي - علمى - تطبيقات الرياضيات لغات - الأسبوع التاسع (9)

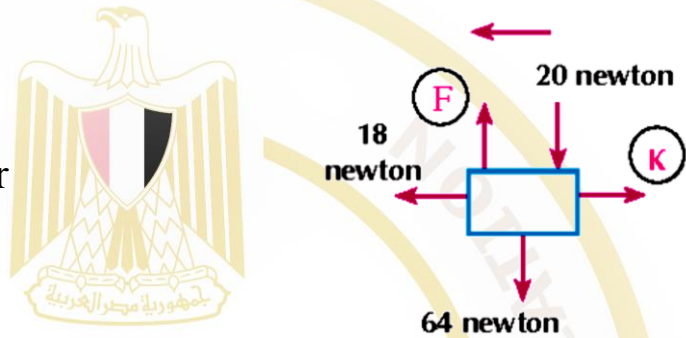
(1) The opposite figure shows a stationary body acting on a set of forces.

Find the values of: F and K.



(2) The opposite figure shows a body moving in the direction shown at a constant velocity under the action of a set of forces.

Find the values of : F and K.



(3) If an object moves at a constant velocity in a straight line under the action of the two forces: $\vec{F}_1 = 6\vec{i} - m\vec{j}$, $\vec{F}_2 = k\vec{i} + 5\vec{j}$, find the value of: m + k .

(4) A car with a mass of 5 tons is moving at a constant velocity under the action of a constant resistance of 3 kg.wt per ton of the car's mass. Find the force of the car's engine.

(5) A train with a mass of 80 tons is moving at a constant speed. the force of the train's engine was 4 ton.wt Find the magnitude of the resistance per ton of the train's mass.

(6) If a body of weight 20 kg.wt descends at a constant velocity on an inclined plane at an angle of 30° Find in kg. wt the resistance of the plane.

(7) A parachutist and his equipment of weight 90 kg.wt , the air resistance to his movement is proportional to the square of his speed. If the maximum landing speed of the parachutist was 12 km/h, find the air resistance when his speed was 8 km/h.

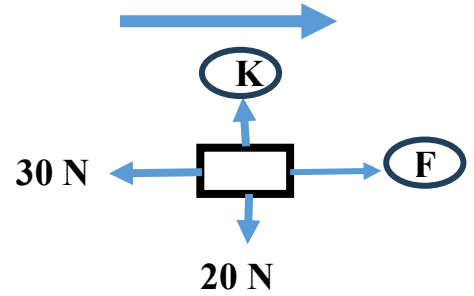
- (8) A train with a mass of 200 tons moves under the action of a resistance proportional to the square of its speed. If this resistance was 9.6 kg.wt per ton of the train's mass when the train's speed was 72 km/h, find the maximum speed of the train if the locomotive is pulling it with a constant force of 4.32 ton.wt
- (9) An object with a mass of 80 kg is placed on a horizontal plane and tied to a rope inclined to the horizontal at an angle of 45° . When the rope is pulled with a force of 48 kg.wt , the object moves at a constant speed on the plane . Find the resistance of the plane and the magnitude of the normal reaction of the plane.
- (10) An object with a mass of 70 kg is pulled at a constant speed on a horizontal plane by a rope inclined to the horizontal by an angle whose cosine is equal to 0.6. If the tension force of the rope is 35 kg . wt , find: the resistance of the plane and the magnitude of the normal reaction of the plane.

(9) التقييمات الأسبوعية - الصف الثانى الثانوى - علمى - تطبيقات الرياضيات لغات - الأسبوع التاسع (9)

First Group

(1) The opposite figure shows a body moving in the direction shown at a constant speed under the action of a set of forces.

Find the values of: F and M.



(2) If a body moves at a constant speed in a straight line under the action of the two forces: $\vec{F}_1 = 3\vec{i} - m\vec{j}$, $\vec{F}_2 = k\vec{i} + 4\vec{j}$ find the value of : $m + k$.

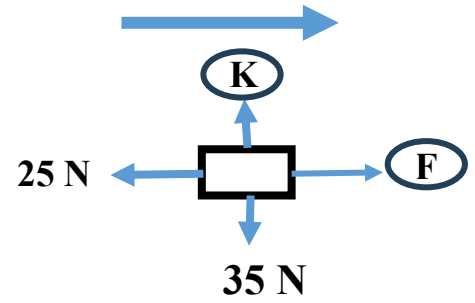
(3) A car with a mass of 6 tons moves at a constant speed under the action of a constant resistance of 5 kg.wt for each ton of the car's mass. Find the force of the car's engine.

(4) A body with a weight of 40 kg.wt falls at a constant speed on an inclined plane with an angle of sine of 0.6. Find in kg.wt the resistance of the plane.

(5) A parachutist and his equipment of weight 50 kg.wt, the air resistance to his movement is proportional to the square of his speed. If the maximum landing speed of the parachutist was 10 km/h, find the air resistance when his speed was 8 km/h.

Second Group

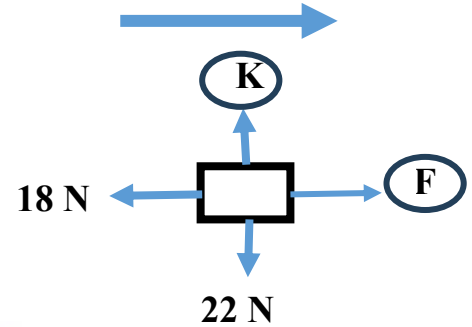
- (1) The opposite figure shows a body moving in the direction shown at a constant speed under the action of a set of forces. Find the values of: F and K.



- (2) If a body moves at a constant speed in a straight line under the action of the two forces: $\vec{F}_1 = 5\vec{i} - m\vec{j}$, $\vec{F}_2 = k\vec{i} + 4\vec{j}$, find the value of: $m + k$.
- (3) A car with a mass of 4 tons moves at a constant speed under the action of a constant resistance of 6 kg.wt for each ton of the car's mass. Find the force of the car's engine.
- (4) A body of weight 25 kg.wt falls at a constant speed on an inclined plane with an angle of sine of 0.8. Find the resistance of the plane in kilograms weight.
- (5) A paratrooper and his equipment weigh 80 kg.wt, and the air resistance to his movement is proportional to his speed. If the maximum landing speed of the paratrooper is 20 km/h, find the air resistance when his speed is 16 km/h.

Third Group

- (1) The opposite figure shows a body moving in the direction shown at a uniform velocity under the action of a set of forces. Find the values of: F and k.

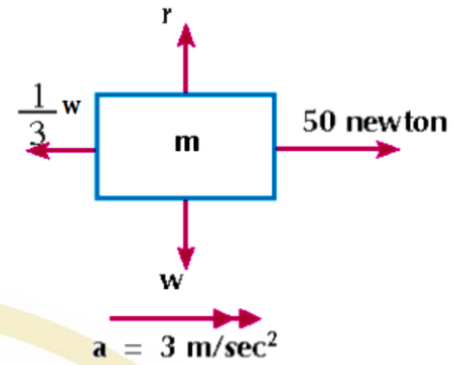


- (2) If a body moves at a constant velocity in a straight line under the action of the two forces: $\vec{F}_1 = 9\vec{i} - m\vec{j}$, $\vec{F}_2 = k\vec{i} + 6\vec{j}$, find the value of: $m + k$.
- (3) A car with a mass of 7 tons moves at a constant velocity under the action of a constant resistance of 5 kg.wt for each ton of the car's mass. Find the force of the car's engine.
- (4) A body weighing 45 kg.wt falls at a constant velocity on an inclined plane with an angle of sine of 0.8. Find the resistance of the plane in kilograms weight.
- (5) A paratrooper and his equipment weigh 48 kg.wt, and the air resistance to his movement is proportional to his speed. If the maximum landing speed of the paratrooper is 16 km/h, find the air resistance when his speed was 10 km/h.

(10) الأداء الصفّي - الصف الثاني الثانوي - علمي - تطبيقات الرياضيات لغات - الأسبوع العاشر (10)

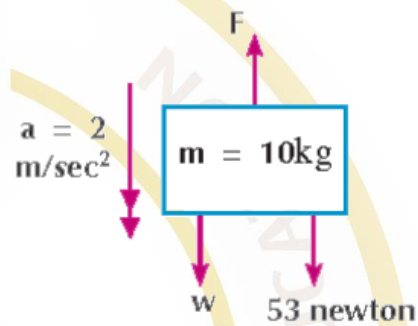
(1) In the opposite figure:

A force of 50 N acts on a body with a mass of m kg, and acquires it a uniform acceleration, shown in the figure in magnitude and direction. Find the value of m .



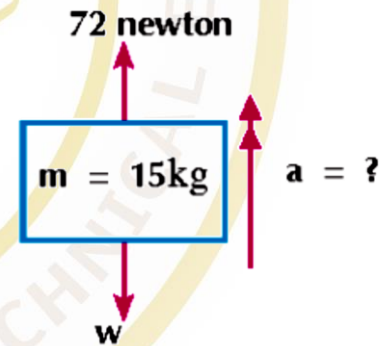
(2) In the opposite figure:

A force of F acts on a body with a mass of 10 kg, and acquires it a uniform acceleration, shown in the figure in magnitude and direction. Find the value of F .



(3) In the opposite figure:

A force of 72 N acts on a body with a mass of 15 kg, and acquires it a uniform acceleration " a ", measured in m/s^2 , shown in the figure in magnitude and direction. Find the value of a .



(4) A body with a mass of 150 gm was acted upon by a force of 4500 dynes. Find the resulting acceleration.

(5) A mass of 20 kg was placed on a smooth horizontal plane, and a horizontal force of magnitude F acted upon it, to move it with a uniform acceleration $49 m/s^2$, find F .

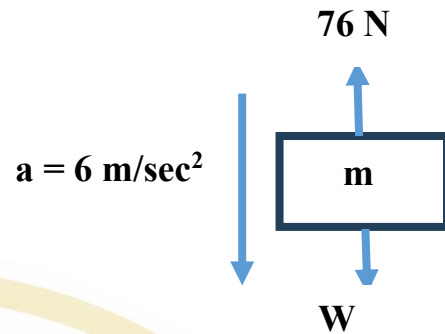
- (6) A force of 10 N acted on a stationary object of mass 8 kg, moving it in its direction with constant acceleration. Calculate the distance traveled after 12 seconds.
- (7) A force of 10 N acted on a stationary object of mass 8 kg, moving it in its direction with constant acceleration. Calculate the object's velocity after 12 seconds.
- (8) A stationary car with a mass of 4.9 tons was acted upon by a force, increasing its speed to 27 km/h in one minute. Find the magnitude of the force, in kg.wt, that acted on the car.
- (9) A train with a mass of 50 tons was moving at a speed of 72 km/h. The brakes stopped after it had traveled 250 meters. Find the force of the brakes resisting the train's motion, expressed in kilograms per ton of its mass.
- (10) A bullet with a mass of 7 gm. was fired horizontally from the muzzle of a gun at a speed of 245 m/sec at a vertical barrier of wood. and embed in it for 12.25 cm before being at rest. Calculate in kg.wt, the magnitude of wood's resistance to a bullet.

(10) الأداء المنزلي - الصف الثاني الثانوي - علمى - تطبيقات الرياضيات لغات - الأسبوع العاشر (10)

(1) In the opposite figure:

A force of 76 N acts on a body with a mass of m kg, and acquires it a uniform acceleration, shown in the figure in magnitude and direction.

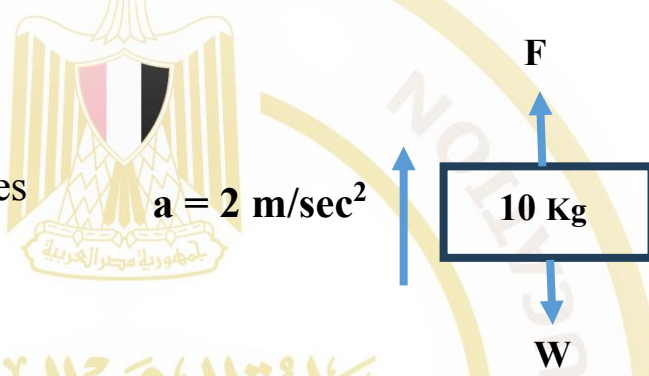
Find the value of m .



(2) In the opposite figure:

A force of F acts on a body with a mass of 10 kg, and acquires it a uniform acceleration, shown in the figure in magnitude and direction.

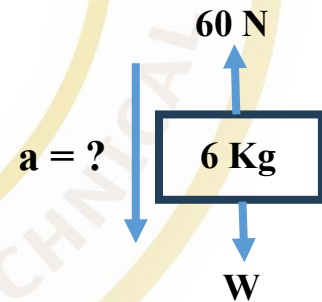
Find the value of F



(3) In the opposite figure:

A force of 60 N acts on a body with a mass of 6 kg, and acquires it a uniform acceleration, measured in m/sec^2 , shown in the figure in magnitude and direction.

Find the value of a .



(4) A body with a mass of 200 gm was acted upon by a force of 5000 dynes. Find the resulting acceleration.

(5) A mass of 10 kg was placed on a smooth horizontal plane, and a horizontal force of magnitude F acted upon it, to move it with a uniform acceleration $19.6 m/sec^2$, find F .

- (6) A force of 30 N acted on a stationary object with a mass of 10 kg, moving it in its direction with constant acceleration. Calculate the distance traveled after 8 seconds.
- (7) A force of 30 N acted on a stationary object with a mass of 10 kg, moving it in its direction with constant acceleration. Calculate the object's velocity after 10 seconds.
- (8) A stationary car with a mass of 6 tons was acted upon by a force, increasing its speed to 36 km/h in 30 sec. Find the magnitude of the force, in kg.wt, that acted on the car.
- (9) A train with a mass of 40 tons was moving at a speed of 54 km/h. The brakes stopped after it had traveled 300 meters. Find the force of the brakes resisting the train's motion, expressed in kg. wt. per ton of its mass.
- (10) A bullet with a mass of 10 gm was fired horizontally from the muzzle of a gun at a speed of 240 m/sec at a vertical barrier of wood. and embed in it for 20 cm before being at rest. Calculate in kg.wt, the magnitude of wood's resistance to a bullet.

(10) التقييمات الأسبوعية - الصف الثانى الثانوى - علمى - تطبيقات الرياضيات لغات - الأسبوع العاشر (10)

First Group

- (1) A body with a mass of 300 gm was acted upon by a force of 6000 dynes. Find the resulting acceleration.
- (2) A mass of 40 kg was placed on a smooth horizontal plane. A horizontal force of F acted upon it, moving it with a constant acceleration of 12 m/sec^2 . Find the value of F .
- (3) A force of 15 N acted upon a stationary body with a mass of 5 kg, moving it in its direction with a constant acceleration. Calculate the distance traveled after 10 seconds.
- (4) A stationary car with a mass of 3.9 tons was acted upon by a force, increasing its speed to 18 km/h in 15 seconds. Find the magnitude of the force acting on the car in kg.wt.
- (5) A train with a mass of 60 tons was moving at a speed of 72 km/h. The brakes stopped the train after it had traveled 400 meters. Find the magnitude of the brake force resisting the train's motion, measured in kilogram weight per ton of its mass.

Second Group

- (1) A body with a mass of 240 gm was acted upon by a force of 7200 dynes. Find the resulting acceleration.
- (2) A 25 kg mass was placed on a smooth horizontal plane. A horizontal force of F acted upon it, moving it with a constant acceleration of 16 m/sec^2 . Find the value of F .

- (3) A force of 35 N acted upon a stationary body with a mass of 7 kg, moving it in its direction with a constant acceleration. Calculate the distance traveled after 6 seconds.
- (4) A stationary car with a mass of 4 tons was acted upon by a force, increasing its speed to 36 km/h in 20 seconds. Find the magnitude of the force acting upon the car, measured in kilogram weight.
- (5) A train with a mass of 45 tons was moving at a speed of 108 km/h. The brakes stopped after it had traveled 900 meters. Find: the magnitude of the brake force resisting the train's movement, measured in kilogram weight per ton of its mass.

Third Group

- (1) A body with a mass of 250 gm was acted upon by a force of 5000 dynes. Find: the resulting acceleration.
- (2) A mass of 36 kg was placed on a smooth horizontal plane. A horizontal force of F acted upon it, moving it with a constant acceleration of 10 m/sec^2 . Find: F.
- (3) A force of 45 N acted upon a stationary body with a mass of 9 kg, moving it in its direction with a constant acceleration. Calculate: the distance traveled after 8 seconds.
- (4) A stationary car with a mass of 4 tons was acted upon by a force, so its speed increased to 54 km/h in 30 seconds. Find: in kilogram weight, the magnitude of the force acting upon the car.
- (5) A train with a mass of 40 tons was moving at a speed of 36 km/h, the brakes stopped after it had traveled 200 meters, so find: the mag. of the brake force resisting the train's movement, estimated in kg.wt per ton of its mass.

(11) الأداء الصفّي - الصف الثانی الثانوی - علمی - تطبيقات الرياضيات لغات - الأسبوع الحادي عشر (11)

- (1) A body with a mass of 200 kg fell from a height of 90 cm onto a pile of sand and sank into it. If the sand's resistance is 2200 kg.wt, calculate the distance the body would sink into the sand before it came to rest.
- (2) A body with a mass of 2 kg fell from a height of 10 meters onto sandy ground and sank into it a distance of 5 cm. Calculate: In kg.wt, the sand's resistance to the body, assuming it is constant.
- (3) A body with a mass of m kg fell from a height of 1 meter onto a pile of sand and sank into it a distance of 10 cm. If the sand's resistance to the body is 55 kg.wt, calculate the value of m .
- (4) The last car of a 49 ton train was separated when its speed was 54 km/h. It moved at a constant retardation and stopped after 125 m. Find: The magnitude of the resistance in kg.wt that affected the separated car.
- (5) A box with a mass of 50 kg is lifted vertically upwards by a rope with a uniform acceleration of 29.4 cm/sec^2 . Find the magnitude of tension in the rope, neglecting the resistance.
- (6) A man pushes a stationary car with a mass of 294 kg with a constant force. Its speed reaches 30 cm/sec after 3 seconds. Find: With a kilogram weight , the force with which the man pushed the car if the resistance is 40 kg.wt .
- (7) Find the magnitude of horizontal force with which the locomotive of a train with a mass of 245 tons pulls it to increase its speed from rest to 18 km/h after it has traveled a distance of one km on a horizontal road, knowing that the magnitude of resistance is 4 kg.wt/ton.

- (8) A train with a mass of 196 tons (including the locomotive) moves with a uniform acceleration of 10 cm/sec^2 on a straight horizontal road. If the air resistance and friction 15 kg.wt per ton of the train's mass, then find, in kilogram weight, the force of the train's machinery.
- (9) A balloon with a mass of 105 kg is moving vertically downwards with a constant acceleration of 98 cm/sec^2 . Find, in kilogram weight, the magnitude of air lifting force acting on the balloon, neglecting air resistance.
- (10) A balloon with a mass of 210 kg is moving vertically upwards with a constant velocity. A body with a mass of 70 kg falls from it, neglecting air resistance. Find, in kilogram weight, the acceleration with which the balloon then ascends after that.

(11) الأداء المنزلي - الصف الثاني الثانوي - علمى - تطبيقات الرياضيات لغات - الأسبوع الحادي عشر (11)

- (1) A body with a mass of 100 kg fell from a height of 40 cm onto a pile of sand and sank into it. If the resistance of the sand is 1100 kg.wt, calculate the distance the body would sink into the sand before it came to rest.
- (2) A body with a mass of 5 kg fell from a height of 4 m onto sandy ground and sank into it a distance of 7 cm. Calculate: in Newtons the resistance of the sand to the body, assuming it is constant.
- (3) A body with a mass of m kg fell from a height of 10 m onto a pile of sand and sank into it a distance of 5 cm. If the resistance of the sand to the body is 50 kg.wt, calculate the value of: m
- (4) The last car of a 19.6 ton railway train was separated when its speed was 18 km/h. It moved at a constant rate and stopped after 120 m.
Find: The magnitude of resistance that affected the separated car with a kilogram weight.
- (5) A box with a mass of 100 kg is lifted vertically upwards by a rope with a constant acceleration of 49 cm/sec^2 . Find the magnitude of tension in the rope, neglecting the resistance.
- (6) A man pushes a stationary car with a mass of 980 kg with a constant force. Its speed reaches 45 cm/sec after 5 seconds. Find: kg.wt, the force with which the man pushed the car if the resistance is 50 kg/wt.
- (7) Find the magnitude of horizontal force that the locomotive of a train with a mass of 490 tons would use to increase its speed from rest to 36 km/h after covering a distance of 500 meters on a horizontal road, knowing that the magnitude of resistance is 5 kg.wt .
- (8) A train with a mass of 245 tons (including the locomotive) is moving with a constant acceleration of 15 cm/sec^2 on a straight horizontal road. If the resistance of air and friction 75 kg.wt per ton of the train's mass, so find the weight of the train's machinery in kilogram weight.

(9) A balloon with a mass of 120 kg is moving vertically downwards with a constant acceleration of 24.5 cm/sec^2 . Find: the magnitude of air lifting force acting on the balloon with a kilogram weight, neglecting air resistance.

(10) A balloon with a mass of 105 kg is moving vertically upwards with a constant speed. A body with a mass of 35 kg falls from it, neglecting air resistance. Find: the acceleration with which the balloon ascends after that.



(11) التقييمات الأسبوعية - الصف الثانى الثانوى - علمى - تطبيقات الرياضيات لغات - الأسبوع الحادي عشر (11)

The first group:

- (1) A 3 kg body falls from a height of 250 cm onto sandy ground and sinks 7 cm. Calculate: in kg.wt the resistance of the sand to the body, assuming it is constant.
- (2) A 10 kg box is raised vertically upwards by a rope with a uniform acceleration of 20 cm/sec^2 . Find the magnitude of the tension force in the rope, neglecting the resistance.
- (3) A man pushes a stationary car of 300 kg with a constant force. After 4 seconds, its speed becomes 40 cm/sec . Find in kilograms, the force with which the man pushes the car if the resistance is 60 kg.wt.
- (4) Find the magnitude of the horizontal force exerted by a locomotive on a train of 200 tons to increase its speed from rest to 5 m/sec after it has traveled a distance of 500 meters on a horizontal track, given that the magnitude of the resistance force is 49 Newton/ton.
- (5) A train with a mass of 300 tons (including the locomotive) moves with a uniform acceleration of 20 cm/sec^2 on a straight horizontal track. If the air resistance and friction are 25 kg.wt per ton of the train's mass, find, in kg.wt, the force exerted by the train's machinery.

The second group:

- (1) A 5 kg body falls from a height of 160 cm onto sandy ground and sinks 8 cm. Calculate, in kilograms, the resistance of the sand to the body, assuming it is constant.
- (2) A 12 kg box is raised vertically by a rope with a uniform acceleration of 120 cm/sec^2 . Find the magnitude of the tension force in the rope, neglecting the resistance.
- (3) A man pushes a stationary car with a mass of 350 kg with a constant force. After 5 seconds, its speed becomes 50 cm/sec . Find, in kilograms, the force with which the man pushes the car, if the resistance is 80 kg.wt.

(4) Find the magnitude of the horizontal force exerted by a locomotive on a train of mass 120 tons to increase its speed from rest to 5 m/sec after it has traveled a distance of 600 meters on a horizontal track, given that the magnitude of the resistive force is 29.4 Newton/ton.

(5) A train of mass 240 tons (including the locomotive) moves with a uniform acceleration of 30 cm/sec^2 on a straight horizontal track. If the air resistance and friction are 35 kg.wt per each ton of the train's mass, find, in kg.wt the force exerted by the train's machinery.

The third Group:

(1) A body of mass 20 kg falls from a height of 10 meters onto a sandy surface and sinks 14 cm into it. Calculate, in kilograms, the resistance of the sand to the body, assuming it remains constant.

(2) A box of mass 8 kg is raised vertically upwards by a rope with a uniform acceleration of 2.2 m/sec^2 . Find the magnitude of the tension force in the rope, neglecting the resistance.

(3) A man pushes a stationary car of mass 300 kg with a constant force. After 7 seconds, its speed becomes 70 cm/sec. Find, in kilograms, the force with which the man pushes the car if the resistance is 60 kg.wt.

(4) Find the magnitude of the horizontal force exerted by a locomotive on a train of mass 100 tons to increase its speed from rest to 10 m/sec after it has traveled a distance of 400 meters on a horizontal track, given that the magnitude of the resistance force is 39.2 Newton/ton.

(5) A train of mass 140 tons (including the locomotive) moves with a uniform acceleration of 60 cm/sec^2 on a straight horizontal track. If the air resistance and friction are 40 kg.wt per each ton of the train's mass, find, in kg.wt the force exerted by the train's machinery.

(12) الأداء الصفي- الصف الثانى الثانوى - علمى - تطبيقات الرياضيات لغات - الأسبوع الثانى عشر (12)

- 1) A body with a mass of 10 kg was placed on a smooth plane inclined at an angle of 30° to the horizontal. A force of 80 N was applied to the body in the direction of the line of greatest slope upward. Find the magnitude and direction of the resulting acceleration and the magnitude of the plane's reaction force on the body.
- 2) A body with a mass of 20 kg was placed on a smooth plane inclined at an angle of $\sin^{-1} \frac{3}{5}$ to the horizontal. A force of 60 N was applied to the body in the direction of the line of the greatest slope upward of the plane. Find the magnitude and direction of the resulting acceleration and the magnitude of the plane's reaction force on the body.
- 3) A body with a mass of m kg was placed at the top of a smooth inclined plane 130 m long and 50 m high. The body was allowed to slide on the plane. Find the magnitude of the body's acceleration on the plane.
- 4) A body with a mass of 13 kg was placed on a smooth inclined plane and, under the influence of its own weight only, to slid a distance of 88.2 m in 6 sec from the start of the starting motion. Find the angle of inclination of the plane to the horizontal.
- 5) A body with a mass of 12 kg is placed on a smooth plane inclined to the horizontal at an angle of 30° . A force of 88.8 N is applied to the body in the direction of the line of greatest slope up the plane. Find the velocity of this body 10 seconds after the start of the motion.
- 6) A body with a mass of 12 kg is placed on a smooth plane inclined to the horizontal at an angle of 30° . A force of 88.8 N is applied to the body in the direction of the line of greatest slope up the plane. Find the distance traveled by this body 8 seconds after the start of the motion.

- 7) A body with a mass of 10 kg is placed on a smooth plane inclined to the horizontal at an angle of 30° . A force of magnitude F N is applied to the body in the direction of the line of greatest slope up the plane. The body moves up the plane with an acceleration of 2 m/sec^2 . Find the magnitude of the force F
- 8) A body with a mass of 10 kg is placed on a smooth plane inclined to the horizontal at an angle of θ , where $\tan \theta = \frac{3}{4}$. A horizontal force of magnitude 15 kg.wt acts on a plane, Its line of action lies on the vertical plane passing through the line of greatest slope of the plane. Find the magnitude and direction of the resulting acceleration and the magnitude of the plane's reaction force.
- 9) A body with a mass of 10 kg moves up a smooth inclined plane inclined to the horizontal at an angle of 30° under the action of a force of F N in the direction of the inclined plane upward with an acceleration of 2.5 m/sec^2 . Find the magnitude of the acceleration with which this body moves on the same plane under the action of a force of $\frac{1}{2} F$ N in the direction of the inclined plane upward slope.
- 10) A body is thrown up a smooth inclined plane inclined to the horizontal at an angle of sine of 0.2 in the direction of the line of greatest slope of the plane with a velocity of 98 cm/sec. Find the distance the body moves on the plane until it comes to instantaneous rest.

(12) الأداء المنزلى - الصف الثانى الثانوى - علمى - تطبيقات الرياضيات لغات - الأسبوع الثانى عشر (12)

- 1) A body with a mass of 5 kg was placed on a smooth plane inclined at an angle of 30° to the horizontal. A force of 50 N was applied to the body in the direction up the inclined plane. Find the magnitude and direction of the resulting acceleration and the magnitude of the plane's reaction force on the body.
- 2) A body with a mass of 10 kg was placed on a smooth plane inclined at a cosine angle $\frac{4}{5}$ to the horizontal. A force of 40 N was applied to the body in the direction up the inclined plane. Find the magnitude and direction of the resulting acceleration and the magnitude of the plane's reaction force on the body.
- 3) A body with a mass of m kg was placed at the top of a smooth inclined plane 50 m long and 30 m high. The body was allowed to slide on the plane. Find the magnitude of the body's acceleration on the plane.
- 4) A body with a mass of 8 kg was placed on a smooth inclined plane and, under the action of its own weight only, to slid a distance of 49 m in 5 seconds from the starting motion. Find the angle of inclination of the plane to the horizontal.
- 5) A body with a mass of 16 kg is placed on a smooth plane inclined to the horizontal at an angle of 30° . A force of 100 N is applied to the body in the direction up the line of greatest slope. Find the velocity of this body 6 seconds after the start of the motion.
- 6) A body with a mass of 16 kg is placed on a smooth plane inclined to the horizontal at an angle of 30° . A force of 100 N is applied to the body in the direction up the line of greatest slope. Find the distance traveled by this body 10 seconds after the starting motion.
- 7) A body with a mass of 20 kg is placed on a smooth plane inclined to the horizontal at an angle of 30° . A force of F N is applied to the body in the direction up the line of greatest slope. The body moves up the plane with an acceleration of 3 m/sec^2 . Find the magnitude of F.

- 8) A body with a mass of 10 kg is placed on a smooth plane inclined to the horizontal at an angle of θ , where $\sin \theta = \frac{3}{5}$. A horizontal force is applied to it towards the plane of magnitude 20 kg.wt. Find the magnitude and direction of the resulting acceleration and the magnitude of the plane's reaction force.
- 9) A body with a mass of 30 kg moves up a smooth inclined plane inclined to the horizontal at an angle of 30° under the influence of a force of magnitude F N in the direction of the line of greatest slope of the plane upwards with an acceleration of 1.5 m/sec^2 . Find the magnitude of the acceleration with which this body moves on the same plane under the action of a force of $\frac{1}{2} F$ N acting in the direction of the line of greatest slope upwards.
- 10) A body is thrown up a smooth inclined plane inclined to the horizontal at an angle of sine of 0.3 in the direction of the line of the greatest slope of the plane with a velocity of 147 cm/sec. Find the distance the body moves on the plane until it comes to instantaneous rest

(12) التقييمات الأسبوعية - الصف الثانى الثانوى - علمى - تطبيقات الرياضيات لغات - الأسبوع الثانى عشر (12)

The First group:

- 1) A body with a mass of 20 kg was placed on a smooth plane inclined at an angle of 30° to the horizontal. A force of 60 N was applied to the body in the direction of the line of greatest slope upward. Find the magnitude and direction of the resulting acceleration and the magnitude of the plane's reaction force on the body.
- 2) A body with a mass of m kg was placed at the top of a smooth inclined plane 100 m long and 60 m high. The body was allowed to slide on the plane. Find the magnitude of the body's acceleration on the plane.
- 3) A body with a mass of 17 kg was placed on a smooth inclined plane and, under the influence of its own weight only, to slid a distance of 61.25 m in 5 sec from the start of the starting motion. Find the angle of inclination of the plane to the horizontal.
- 4) A body with a mass of 30 kg is placed on a smooth plane inclined to the horizontal at an angle of 30° . A force of magnitude F N is applied to the body in the direction of the line of greatest slope up the plane. The body moves up the plane with an acceleration of 4 m/sec^2 . Find the magnitude of the force F .
- 5) A body is thrown up a smooth inclined plane inclined to the horizontal at an angle of sine of 0.1 in the direction of the line of greatest slope of the plane with a velocity of 112 cm/sec. Find the distance the body moves on the plane until it comes to instantaneous rest.

The Second group:

- 1) A body with a mass of 30 kg was placed on a smooth plane inclined at an angle of 30° to the horizontal. A force of 90 N was applied to the body in the direction of the line of greatest slope upward. Find the magnitude and direction of the resulting acceleration and the magnitude of the plane's reaction force on the body.
- 2) A body with a mass of m kg was placed at the top of a smooth inclined plane 250 m long and 150 m high. The body was allowed to slide on the plane. Find the magnitude of the body's acceleration on the plane.
- 3) A body with a mass of 21 kg was placed on a smooth inclined plane and, under the influence of its own weight only, to slid a distance of 88.2 m in 6 sec from the start of the starting motion. Find the angle of inclination of the plane to the horizontal.
- 4) A body with a mass of 50 kg is placed on a smooth plane inclined to the horizontal at an angle of 30° . A force of magnitude F N is applied to the body in the direction of the line of greatest slope up the plane. The body moves up the plane with an acceleration of 6 m/sec^2 . Find the magnitude of the force F.
- 5) A body is thrown up a smooth inclined plane inclined to the horizontal at an angle of sine of 0.4 in the direction of the line of greatest slope of the plane with a velocity of 196 cm/sec. Find the distance the body moves on the plane until it comes to instantaneous rest.

The Third group:

- 1) A body with a mass of 50 kg was placed on a smooth plane inclined at an angle of 30° to the horizontal. A force of 85 N was applied to the body in the direction of the line of greatest slope upward. Find the magnitude and direction of the resulting acceleration and the magnitude of the plane's reaction force on the body.
- 2) A body with a mass of m kg was placed at the top of a smooth inclined plane 50 m long and 30 m high. The body was allowed to slide on the plane. Find the magnitude of the body's acceleration on the plane.
- 3) A body with a mass of 7 kg was placed on a smooth inclined plane and, under the influence of its own weight only, to slid a distance of 156.8 m in 6 sec from the start of the starting motion. Find the angle of inclination of the plane to the horizontal.
- 4) A body with a mass of 40 kg is placed on a smooth plane inclined to the horizontal at an angle of 30° . A force of magnitude F N is applied to the body in the direction of the line of greatest slope up the plane. The body moves up the plane with an acceleration of 5 m/sec^2 . Find the magnitude of the force F .
- 5) A body is thrown up a smooth inclined plane inclined to the horizontal at an angle of sine of 0.6 in the direction of the line of greatest slope of the plane with a velocity of 294 cm/sec. Find the distance the body moves on the plane until it comes to instantaneous rest.

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

